16.0 SITE SAFETY PROCEDURES

16.1 General Site Safety Procedures

General site safety procedures for the PMC and each PMC Subcontractor are summarized in the *Zero Incident Performance* Project Rules Handbook (FWENC 2000c) and the Rocky Mountain Arsenal Health and Safety Guidelines Handbook (FWENC 2000b). These handbooks shall be distributed to and reviewed by all PMC and PMC Subcontractor personnel who will be working on active field projects. Employees shall complete the acknowledgment form in the back of the Zero Incident Performance Project Rules Handbook, and the acknowledgment form shall be kept in the employee's on-site training record.

16.2 Task-Specific Safety Procedures

The task Subcontract may identify additional safety procedures required due to the work activities or site location. Identified safety procedures shall be included in task-specific HASPs and/or AHAs.

16.3 Passenger Vehicles

All site workers who operate passenger vehicles including pickup trucks at RMA shall possess a valid driver's license, proof of insurance, and current vehicle registration. Seat belts shall be worn at all times and posted speed limits shall be observed. The speed limit is 25 miles per hour in areas without a posted speed limit. Overcrowding in passenger vehicles is prohibited. A seat belt must be provided for and used by each passenger and seating passengers in the pickup truck bed is not permitted. Vehicles shall not be left unattended while the engine is running and when parked, the parking brake shall be set. The use of cellular phones, including the use of a hands-free feature in conjunction with a cellular phone, is prohibited while operating passenger vehicles and pickup trucks.

Site workers (other than visitors) shall obtain a valid vehicle pass for personal vehicles from the RVO Eagle Pass Administrator. Privately owned vehicles shall be parked only in designated areas and are not permitted in the CRA (except for designated areas such as the parking areas adjacent to South Plants, HWL, and Submerged Quench Incinerator [SQI]). Operation of a government-owned vehicle requires a valid permit issued by RMA and maintenance of a vehicle usage and inspection log. Signing the vehicle log verifies that a walkaround inspection was performed prior to vehicle operation. A walkaround inspection of government and PMC vehicles for apparent damage or vehicle safety-related problems (cracked windshield, flat tire, rear view mirrors, etc.) shall be performed by the operator prior to each vehicle use.

16.4 Pedestrian and Bicycle Traffic

All site workers are permitted to use open, designated roadways and areas for pedestrian (walking and running) and/or bicycle traffic for recreational or commuting purposes. The current open, designated areas at RMA for bicycling include 7th Avenue from the West Gate to the east CRA entrance point; the Building 111 complex; C Street from 9th Avenue to the South Gate; B Street from 7th Avenue to 6th Avenue; the Logistics Complex on B Street; 6th Avenue between B Street and C Street; D Street from 96th Avenue to approximately 10th Avenue; 9th Avenue from C Street to D Street; and designated pedestrian areas. The service road north and west from Building 128 to C Street, Rattlesnake Hill, and the path surrounding Lake Mary are closed to bicycle traffic. Please refer to the most current version of the Rocky Mountain Arsenal Routes and Trails Map specific routes. Current maps are available through the PMC Health and Safety Department. Note that open,designated routes and trails are subject to change at any time.

Bicyclists must follow all applicable traffic laws and RMA Access requirements and are required to wear a bicycle helmet and attach a high visibility flag to their bicycle or wear a high visibility traffic vest jersey or jacket while riding at RMA. Bicycles ridden after and before daylight hours shall be equipped with operational front and rear lights. RVO-organized and approved events may be exempted from these requirements.

16.5 Permit Programs

The PMC and each PMC Subcontractor will implement the following permit programs when conducting work at RMA. Approved permits shall be kept in the work area or other readily accessible location for review by subcontractor, PMC, or RVO personnel, and posted where practical. All PMC Subcontractors shall coordinate permits through the PMC Project Manager or assigned designee.

16.5.1 Hot Work

Work practices that do not require the use of hot work shall be used where feasible. All hot work (flame- or spark-producing activity) requires specific approval of the PMC and permit coordination/approval of RMA FES prior to and after performing hot work. The permit form is shown in Figure 16-1.

16.5.2 Intrusive Soil Activity (Excavations)

16.5.2.1 Definition

Intrusive soil activities are defined as “any man-made disturbance of the soil such as a cut, cavity, scrape, grading, excavation, trench, or depression in the earth’s surface (including drilling activities) formed by earth removal, regardless of dimensions or depth. The following activities, if performed outside of the designated Ordnance and UXO Potential Areas, are excluded from this definition:

- Placement of markers such as flags or wooden stakes
- Road surface maintenance activities, including snow removal.
- Vehicle and pedestrian traffic
- Clearing and grubbing activities outside designated contamination areas at depths less than 6 inches
- Sod removal, shallow landscaping, and revegetation activities outside designated contamination areas at depths less than 6 inches
- Stockpiles placed and moved within the same project scope by the same company
- Waste disposal activities at the HWL, Basin A, and the Enhanced Hazardous Waste Landfill

16.5.2.2 Requirements

Intrusive soil activities work shall be conducted in accordance with this section, 29 CFR 1926, Subpart P and the PMC Intrusive Soil Activity Procedure CP-008-RMA. Copies of the Intrusive Soil Activity Procedure and designated area maps are available through the PMC Construction Coordination Group (CCG). Note that work conducted in designated contamination areas, UXO potential areas, and/or Cultural Resource Areas requires advance review and approval by the PMC and intrusive activities may be restricted.

The PMC Subcontractor shall ensure that all employees in an excavation are protected from cave-ins by an adequate protective system for all excavations which are at least 4 feet or deeper, and for excavations less than 4 feet where examination by a competent person indicates a potential for cave-ins. An AHA shall be developed for personnel who are working in and around an excavation deeper than 4 feet or where the potential for cave-in is present. Excavated

materials (spoils) should be placed a minimum distance of 5 feet from the edge of the excavation where feasible, and in all cases no less than 2 feet from the edge of the excavation.

16.5.2.3 Permits

An approved PMC Intrusive Soil Activity Permit shown in Figure 16-2 shall be obtained prior to performing any intrusive soil activities. Permits, permit reviews/approvals, and utility locates shall be coordinated through the PMC CCG.

16.5.2.4 Training and Qualifications

The PMC Subcontractor shall ensure that all personnel performing work in and around excavations have awareness training which includes a discussion of the hazards and control measures associated with underground utilities, cave-ins, access and egress, use of protective systems (benching, shoring, sloping, trench boxes), potential atmospheric hazards, equipment operations hazards, water accumulation hazards, stability of adjacent structures, and the employer's excavation inspection program.

PMC Subcontractors shall assign a qualified competent person meeting the requirements of OSHA 29 CFR 1926 Subpart P to each excavation. The competent person shall be available on-site (at the excavation area as necessary) and involved in all important aspects of planning and executing excavation work including soil classification, identification and use of protective systems, and permit approval. The competent person is responsible for understanding and enforcing all safe work practices required for the excavation work including training, inspections, and precautions for work near potentially hazardous utilities. The qualification (knowledge, experience, and/or training) of the competent person shall be demonstrated to the PMC Project Manager or designee and documented prior to the start of excavation work.

16.5.2.5 Intrusive Activities Near Utilities

Contacting underground utilities while performing intrusive soil activities can be extremely hazardous. The PMC CCG will assist subcontractors in avoiding this hazard by performing a locate (physical marking of the approximate location) of the known underground utilities that are shown on RMA Base Information Maps or identified through historical knowledge. The Subcontractor is responsible for marking or "white lining" the excavation area, and verifying the PMC utility locate using field instruments, potholing, or other methods deemed appropriate by the Subcontractor. The potential for unknown underground utilities may exist in many areas, and the Subcontractor is responsible for ensuring that safe work practices are used to further identify and avoid contact with unidentified underground utilities. Safe work practices used by the Subcontractor to avoid contact with known or unknown underground utilities shall be included in the task-specific HASP or AHA as appropriate.

Intrusive soil activities conducted within a five foot "Buffer Zone" (horizontal or vertical, as measured from the outside edge of the utility) of any utility (electric, gas, high pressure, chemical storage tanks, pipelines, sewers, etc.) requires the use of non-aggressive excavation methods such as hand excavation using non-conductive hand tools, use of an air spade, hydro-excavation, or similar means. The boundaries of the Buffer Zone will be observed at all times and aggressive excavation methods (excavators, backhoes, drill rigs and other mechanized equipment) shall be restricted to areas outside the Buffer Zone. Additionally, the utility will be de-energized (and purged if necessary) verified as de-engergized, and locked out. Methods for de-energizing will depend on the utility or material being conveyed and shall physically prevent the transmission, flow, or release of energy. De-energizing utilities shall be verified by demonstration (e.g. opening valve, switching on equipment, or through use of electrical test equipment by qualified electrical workers) and be in accordance with an approved Lockout/Tagout program.

There may be occasions where it is necessary to use aggressive excavation methods inside the Buffer Zone, or where utilities cannot be de-engerized. These situations require prior approval by the PMC Health and Safety Manager or designee using the FCR process. Additional safe work practices such as use of an excavation observer, protection of utilities, use of additional PPE, and similar precautions may be required as a condition of approval.

16.5.3 Lockout/Tagout

Lockout/tagout of hazardous energy sources shall be controlled using permit systems and applicable requirements as described in the following OSHA standards:

- 29 CFR 1910.147 – The Control of Hazardous Energy (Lockout/Tagout)
- 29 CFR 1926.417 – Lockout and Tagging of Circuits
- 29 CFR 1910, Subpart S – Electrical
- 29 CFR 1926, Subpart K – Electrical
- 29 CFR 1910.331 – Safety – Related Work Practices
- 29 CFR 1926, Subpart G – Signs, Signals and Barricades

The PMC Subcontractors shall maintain and implement the following as part of their Lockout/Tagout program:

- A current written Lockout/Tagout program which covers the work to be performed
- A Lockout/Tagout training program that includes annual training and updated training whenever there is a change in the work environment
- A written procedure or AHA for each unique machine or piece of equipment that requires Lockout/Tagout
- The PMC Subcontractor shall obtain PMC Project Manager or assigned designee approval of Lockout/Tagout programs, procedures, or AHAs prior to conducting work.

16.5.4 Confined Space Entry

All confined space entries shall be controlled through the use of a permit system (Note: this includes spaces that meet the OSHA definition of nonpermit-required confined spaces). All PMC personnel shall comply with the confined space entry procedures contained in the FWENC Environmental Health and Safety Program Manual. All PMC Subcontractors shall comply with their own company permit system, the use of which requires approval by the PMC Health and Safety Manager. The attached Confined Space Pre-Entry Checklist and Permit shown in Figures 16-3 and 16-4 or equivalent Subcontractor checklist and permit are required for each confined space entry.

16.6 Line Breaking

Line breaking or cutting pipelines, tanks, and similar structures shall be performed in accordance with a PMC-approved written procedure that addresses the safety hazards associated with this work. This procedure may be stand-alone or part of a task-specific HASP or AHA. The Line Breaking Checklist shown in Figure 16-5 shall be completed by the PMC Subcontractor and must be approved by the PMC Project Manager or designee prior to line breaking.

16.7 Ordnance

All ordnance activities shall meet the requirements of the PMC UXO Department procedures. For specific projects that involve ordnance operations, the Subcontractor shall follow the requirements detailed in the PMC UXO work plan and task-specific HASP. Activities must be coordinated with the PMC UXO Department if the worksite is located within an Ordnance Potential Area.

16.8 Asbestos

All field operations involving asbestos or ACM shall be conducted in accordance with applicable requirements of 29 CFR 1926.1101, and 5 Code of Colorado Regulations 1001-10 (Regulation No. 8, Control of Hazardous Air Pollutants, Part B - Emission Standards for Asbestos).

16.9 Hazard Communication

The PMC Subcontractors who use hazardous chemicals on-site that fall under the requirements of 29 CFR 1910.1200 or 29 CFR 1926.59 are required to maintain and implement a Hazard Communication Program in compliance with OSHA requirements. Minimum elements shall include a written plan, delineation of responsibilities for program implementation, maintenance of a list of hazardous chemicals used on-site, maintenance of Material Safety Data Sheets (MSDS) for each chemical, proper labeling of containers, and employee training. Site implementation of the Hazard Communication program elements by PMC Subcontractors shall be included in the task-specific HASP. Hazardous waste does not fall under the scope of a Hazard Communication Program.

The PMC Subcontractors shall maintain a list of chemicals and corresponding MSDS on-site (at RMA) that is readily accessible to site workers. Employee training shall be conducted and documented during the initial site-specific training, and periodically during daily safety meetings if new chemicals are brought on-site. The PMC Subcontractors shall ensure that all containers are properly labeled and appropriate for safely handling the chemical.

The PMC employees will follow the Hazard Communication Program established by the FWENC Environmental Health and Safety Program Manual. A list of hazardous chemicals and corresponding MSDS are maintained in Trailer Z-95. Hazard communication training is provided initially during site-specific training and periodically during safety meetings for new chemicals used at the site. The PMC Procurement Department is responsible for ensuring that health and safety approval is obtained prior to ordering chemicals, and that the vendor provides a MSDS for new chemicals used at the site. All hazardous material containers must be properly labeled, either with the manufacturer's original label or with the hazardous material name and corresponding National Fire Protection Association warning label.

16.10 Fall Protection

The PMC and PMC Subcontractor employees working over any machinery, open spaces, hazardous substances, unguarded heights, or steep slopes or otherwise subjected to falls 6 feet or greater in height shall be protected by adequate fixed scaffolding, guard rails or safety nets, or secured by personal fall arrest systems. Shock-absorbing lanyards shall be used where feasible to prevent injury during a fall. Fall protection, stairways and ladders shall meet the requirements of 29 CFR 1926 Subpart M, Fall Protection, and 29 CFR 1926 Subpart X, Stairways and Ladders. Use of portable ladders requires maintaining three points of contact at all times, otherwise alternative means such as scaffolds or sky lifts shall be used.

16.11 Demolition Operations

Demolition operations shall be conducted in accordance with 29 CFR 1926, Subpart T, Demolition, including performance of an engineering survey by a competent person. The PMC Subcontractors shall develop, for review and approval by PMC project personnel, a Demolition Plan meeting the requirements described in Engineering Specification Section 02050, Demolition.

16.12 Trailers and Other Facilities

Plans for the layout of temporary construction facilities, trailers, fencing, access routes and anchoring systems for temporary structures shall be submitted to the PMC Project Manager or designee for approval prior to placement. The trailer or temporary office must have adequate exterior stairways, lighting, walking surfaces, and a means of egress that meets OSHA requirements.

Fire lanes providing access to all areas shall be established and maintained free of obstruction. Vehicles, equipment, materials, and supplies shall not be placed so that access to fire hydrants and other fire fighting equipment is obstructed. Material storage is prohibited underneath trailers.

Additional requirements specific to trailers and trailer stairs are given in Engineering Specification Section 01550, Temporary Facilities, Utilities and Controls.

16.13 Construction Equipment Safety

Use and operation of construction equipment such as motorized vehicles, heavy equipment, water trucks, and haul trucks (excluding passenger vehicles and pickup trucks) shall meet the following requirements:

- On-site equipment shall meet the requirements of all relevant OSHA standards.
- Equipment will be inspected by the Subcontractor HSS or designee upon arrival at RMA prior to use. The inspection will include a check for cleanliness, fluid leaks, and confirming installation of appropriate safety devices, including seat belts, headlamps and brake lights, backup alarms, and rollover protection. Results of the inspection will be documented on an inspection checklist. Deficiencies found shall be corrected before use. The PMC will randomly check Subcontractor compliance with equipment inspection requirements.
- Operators shall complete inspections on all construction equipment prior to use each day to ensure that parts, accessories, and equipment are in safe operating condition and free of apparent damage. The inspection shall be documented on the Construction Equipment/Vehicle Inspection Checklist shown in Figure 16-6 or an equivalent Subcontractor form. The inspection should include, as a minimum, basic equipment and motor vehicle components and systems such as service brakes, parking brakes, emergency brakes, horn, steering mechanisms, operating controls, windshields, windows, mirrors, tires, lights, seat belts, headlamps, brake lights, rollover protection structures, backup alarms and evidence of fluid leaks. Deficiencies shall be noted and corrected prior to use. Copies of the inspections shall be maintained on-site and readily available for inspection by PMC or RVO representatives. Vehicles are to be taken out of service if they do not pass inspection.
- Operators of over-the-road vehicles on RMA such as haul trucks and water trucks must possess a valid commercial driver's license (CDL) if a CDL is normally required when operating such vehicles on public roads.
- The Subcontractor shall obtain copies of valid and relevant vehicle operator licenses such as a CDL (or have a system in place to verify possession of current licenses) and/or training records.
- All haul trucks that must enter consolidation areas (HWL or Basin A) or other controlled areas where windows are required to be kept closed, must have adequate climate control equipment installed in the cab that includes defrosting and air conditioning.
- Construction equipment used for demolition or materials handling shall be equipped with a demolition cage, wire screen, or equivalent structures to prevent materials or debris from breaking cab windows where the potential for window breakage hazards exists.
- Construction equipment shall be equipped with operable audible backup alarms.
- When equipped, construction equipment shall have operable visual backup indicators.

- Skid steer equipment (e.g., Bobcats) shall not be used unless authorized by the PMC Health and Safety Representative and use is limited to specific tasks and areas of operation.
- Eating, drinking, smoking, and using cellular telephones (including the use of a hands-free feature in conjunction with a cellular phone). is prohibited when operating construction equipment.
- Construction equipment operators shall have the experience, skills, and knowledge to safely operate the equipment to be used. The PMC Subcontractor is responsible for ensuring that operators have the appropriate skills and qualifications and shall ensure the following is accomplished:
    - Evaluate each operator's experience relative to the job task(s).
    - Evaluate each operator's skills prior to unsupervised operation of the vehicles or equipment.
    - The PMC Subcontractor shall maintain documentation of their evaluation(s) of each operator's capability to operate each assigned vehicle/equipment type in a safe manner.
- Over-the-road haul vehicles shall have documentation of annual inspections in accordance with Department of Transportation requirements given in 40 CFR 396, Subpart B, Appendix G, Minimum Periodic Inspection Standards.
- The PMC Subcontractor shall ensure that haul trucks are not loaded beyond the truck/trailer manufacturer's recommendations.
- All construction equipment is to have documented preventive maintenance compliant with the manufacturer's minimum recommendations. The preventive maintenance program is to be implemented by a trained/qualified individual and preventive maintenance records shall be maintained on-site. For rental equipment, copies of recent preventive maintenance records shall be obtained from the vendor and maintained on-site while the equipment remains on-site.
- Work shall not be conducted on heavy equipment from heights greater than 6 feet without proper manlifts, work platforms, fall protection, or an approved AHA if fall protection is not required.
- Equipment operators may not work for more than 12 hours in any 24-hour period without prior approval from the PMC Project Manager and Health and Safety Representative.
- Operators shall not jump to the ground from vehicle ladders, cabs, or platforms.
- Equipment shall be operated on grades in accordance with the equipment manufacturer's recommendations.
- Whenever the equipment is parked, the parking brake shall be set. Equipment parked on inclines shall have the wheels chocked and the parking brake set.
- Chocking is required whenever a worker is under any part of any construction equipment or associated loads and during decontamination or cleaning processes (unless a written AHA is in place requiring control measures that provide equivalent protection).
- Chocking is not required for tracked equipment or rubber-tired equipment if the parking brakes are set and components such as blades, buckets, outriggers, etc. are fully lowered to the ground and the equipment is completely stabilized.
- Equipment shall be parked in a zero energy condition (blades, dump bodies, buckets, loads, etc.) so that there is no retained energy remaining in the equipment.
- On-site equipment maintenance operations that pose a hazard to personnel shall be addressed in the task-specific HASP or AHA.
- Personnel in areas in which heavy equipment is being operated shall wear high visibility traffic safety vests and make eye contact with the operator before approaching.
- All construction vehicles shall be operated in accordance with the PMC Traffic Plan, Appendix B, Haul Road Operations Plan.

16.14 All-Terrain and Utility Vehicles

All-terrain and utility vehicles (e.g., John Deere Gator, Kawasaki Mule, Polaris Utility Vehicle) shall not be used at RMA without specific written approval from the PMC Project Manager and the PMC Health and Safety Manager. If approval is obtained, the following requirements are applicable:

- The vehicle must be appropriate for the specific task(s) to be performed.
- The vehicle must be equipped with a rollover protective structure, seatbelts, headlights, brake lights, turn signals, side or rearview mirrors, and a high-visibility flag extending upwards a minimum of 4 feet.
- An approved AHA for the task(s) is required which addresses the hazards associated with the vehicle use, including, but not limited to, vehicle limitations on rough and uneven terrain, operation near other construction or heavy equipment, use on open access and haul roads, and personal protective equipment including protective helmets.
- Operators must be qualified through appropriate training and/or experience and the qualifying documents be maintained as part of the employee's training records.
- Operators are required to read and follow the guidelines of the vehicle operator's manual and the task(s) AHA.

16.15 Crane and Hoisting Operations

Crane operations shall be conducted in accordance with 29 CFR 1926.550, Cranes and Derricks. Rigging of loads being lifted by cranes shall comply with the requirements of 29 CFR 1926.251, Rigging Equipment for Material Handling. For critical lifts, a critical lift plan is required that meets the requirements of FWENC Construction Procedure CP-13, Critical Lifts. Refer to Figure 16-7, Critical Lift Plan.

All critical lift plans require the review and approval of the PMC Project Manager or designee. Critical lifts are defined as lifts for which any of the following conditions exist:

- Any lift of 30,000 pounds or more
- The weight of the lift exceeds 75 percent of the crane's rated capacity in the configuration that will be used during the lift.
- Lifts for which the path of travel is out of the operator's view
- Lifts made with more than one piece of lifting equipment
- Lifts involving nonroutine or difficult rigging arrangements
- Hoisting of personnel with a crane or derrick
- Lifts involving high value items where damage would result in an unacceptable financial or production loss
- Any lift which the lifting equipment operator believes should be considered critical

16.16 Flammable and Combustible Liquids

Dispensing of flammable and combustible liquids shall comply with the following:

- Refueling areas shall be located at least 25 feet from other operations.
- Spill containment, collection, and cleanup materials shall be provided in refueling areas.
- Transfer containers shall be bonded together electrically.
- All spark-producing equipment in the immediate vicinity of flammable liquid dispensing operations shall be shut down. Adequate cool-down time for generators, pumps, and other portable equipment shall be provided prior to refueling.
- Pressure buildup in portable fuel cans shall be relieved away from hot surfaces and spark-producing equipment.
- Dispensing nozzles shall have an automatic shutoff and no "latch open" devices.
- Disconnect switches for refueling equipment shall be located away from refueling operations.

- Smoking and spark-producing equipment or tools are prohibited in the fueling area.
- A fire extinguisher rated no less than 20lb, type ABC, shall be securely placed between 25 and 75 feet from each refueling operation.

Flammable and combustible liquid storage requirements are defined in Engineering Technical Specification, Section 01561 Management of Petroleum Liquids and Materials, and include the following:

- Only properly labeled and approved safety containers shall be used for handling and storage. Flammable storage cans shall not be stored in direct sunlight.
- For indoor storage of flammable liquids, no more than 25 gallons of flammable liquids may be stored outside of a flammable cabinet, so long as the material is stored in 5-gallon safety cans within 25 feet of a minimum 10lb type ABC fire extinguisher.
- A fire extinguisher rated no less than 20lb, type ABC, shall be securely placed between 25 and 75 feet from outside storage of flammable materials other than vehicle refueling facilities (e.g., 5-gallon safety cans of gasoline).
- Exits and other means of egress shall not be used for storage.
- All nonbulk materials shall be stored in a flammable cabinet. Stored quantities shall not exceed 60 gallons per cabinet. No more than three cabinets shall be placed in a single area.
- Outdoor portable tanks shall be separated by a minimum 5-foot clear area.
- A 12-foot-wide access shall be maintained for fire equipment to reach outdoor storage areas.
- Outdoor storage areas shall be maintained free of weeds, rubbish, and other fuel sources.
- Outdoor storage tanks shall have adequate venting capacity.

16.17 Fire Protection and Prevention

Effective fire prevention requires the following:

- Smoking is prohibited in any structure (e.g., building, trailer, shed) on RMA regardless of ownership.
- Smoking is prohibited within 50 ft of any structure.
- All work operations shall comply with the requirements of 29 CFR 1926, Subpart F, Fire Protection.
- A minimum 10-lb type ABC fire extinguisher shall be provided within 75 feet of storage areas at which more than 5 gallons of flammable or combustible liquids or more than 5 pounds of flammable gas are being stored.
- Fire extinguishers shall be installed in all trailers and buildings.
- Fire extinguishers shall be inspected and maintained monthly and equipped with inspection tags.
- Flammable and combustible liquid and gas storage and dispensing areas shall be posted “No Smoking or Open Flame.”
- Fuel storage areas shall be maintained free of weeds and other fuel sources.

16.18 Office Safety

An office safety program shall be implemented for personnel who would normally work in the office environment to inform them of the hazards that may be encountered and the precautions to follow to prevent injury or illness. The elements of the office safety program would include the following:

- Developing and maintaining an Employee Emergency and Fire Prevention Plan for the office work areas (this should be included as part of the task-specific HASP)
- Conducting personnel training on office safety hazards and the precautions to take to avoid injury or illness

- Conducting regular office area inspections that document findings and corrective actions (this should be included in regular project or task-specific inspection programs)
- Maintaining an office area that is clean and orderly

16.19 ZIP SLIPS

ZIP SLIPS are used to promote employee involvement in environmental, safety, and quality (ESQ) programs through personal action, and serve as a simple mechanism to document this involvement. ZIP SLIPS are used to 1) recognize employees for a "job well done," 2) make suggestions, 3) report potential hazards, and 4) report potential quality concerns. The ZIP SLIPS should not be used in lieu of existing ESQ programs such as direct reporting and correction of hazards by employees and supervision, incident reporting, nonconformance reporting, or use of the work order mechanism to improve workplace conditions. However, ZIP SLIPS can be used to document personal action taken by employees in these ESQ program areas. The PMC and PMC subcontractors are responsible for encouraging the use of ZIP SLIPS and assigning a ZIP SLIP coordinator to facilitate the process and keep records. A printable version of the ZIP SLIP, including ZIP SLIP Guidelines, is included as Figure 16-8. Equivalent employee involvement programs developed by PMC Subcontractors may be substituted for the ZIP SLIP if reviewed and approved by the PMC Health and Safety Manager.

Figure 16-1 Hot Work Permit Form

	PROGRAM MANAGEMENT CONTRACTOR	**HOT WORK PERMIT**	
(For use of this form, see AR 420-90: The proponent agency is USACE.)			
1. Location	2. Date:	3. Permit No.:	
4. Work Type: Cutting ☐ Welding ☐ Other ☐	5. Start Time:	6. Finish Time:	
7. (Print) Contractor's Company and Name of Responsible Individual:		7a. Signature of Responsible Individual:	
PRECAUTIONS BEFORE OPERATIONS:			
CHECKLIST:		CHECK ONE: Yes	No
8. Did Fire Department inspect site?			
9. Are there procedures for Fire Department notification? Emer# _____.			
10. Are combustibles in area noted? Type _____ Size _____ Qty _____			
11. Should combustibles be covered? (If yes, note in remarks.)			
12. Are proper extinguishers on hand?			
13. Is wet down necessary?: (if yes, note in remarks)			
14. Is smoking permissible at work sites?			
15. Is continuous fire watch required?			
16. Is Fire Department standby required?			
17. Are other precautions required?			
18. FIRE DEPARTMENT INSPECTOR'S SIGNATURE:		18b. Date:	
PRECAUTIONS AFTER OPERATIONS:			
CHECKLIST:		CHECK ONE: Yes	No
19. Was Fire Department notified after hot-work operation was complete?			
20. Time Notified:			
21. Did Fire Department Inspector inspect work site?			
22. Time of Inspection:			
23. Are after-work conditions safe? (If no, note in remarks.)			
24. Are heat-producing devices safe if left at work site?			
25. RESPONSIBLE INDIVIDUAL'S SIGNATURE:		25b. Date:	
26. FIRE DEPARTMENT INSPECTOR'S SIGNATURE			
27. Remarks:			
NOTE: PERMIT VALID ON DAY OF OPERATION AT ONE LOCATION ONLY			
DA FORM 5383-R, MARCH 94			

Figure 16-2. Intrusive Soil Activity Permit Form

INTRUSIVE SOIL ACTIVITY PERMIT

Permit No.:	FW –	**Expires:**	

Project Information

1. Project:	2. Contact Person/Phone No./Radio No.:
3. Task(s):	4. Work Start Date/Time:
5. Subcontractor(s):	6. Scheduled Finish Date:

Job Description

7. Describe job activities, locations, and depths. Be specific as this permit applies only to the job described below. Attach description, maps and drawings as necessary.

8. This permit includes all revegetation activities associated with the project and shown on the attached figures. Yes ❑ No ❑ N/A ❑

Potential Hazard Checklist

Potential Hazards	Yes	No	Requirements	Comments
9. Have this job and location been reviewed by PMC Utility location Group for potential contact with underground utilities?			Attach completed Utility Locate Request form regardless of the potential to encounter underground utilities. Follow all restrictions or special instructions noted.	
10. Is this job located in a contamination area? (Refer to "Area of Contamination" Map)			If yes, health and safety requirements must be specified in a task plan/procedure such as the task-specific health and safety plan or activity hazard analysis.	
11. Is this job located in an ordnance potential area? (Refer to "Ordnance and UXO Potential Areas" Map)			An Ordnance Specialist Review and Approval is required. Any special precautions required must be specified in a task plan/procedure or attached to this permit.	
12. Does this job present a hazard to personnel or property and involve an excavation as defined in OSHA Standard 29 CFR 1926, Subpart P?			If yes, a qualified Competent Person must be assigned to the job and all applicable requirements (e.g., excavation plan, protective systems, barricades, and daily inspections) must be implemented for the work.	
13. Is this job located in a cultural resource "Area of Critical Concern"? (Refer to the dark areas on the "Cultural Resource Areas" Map)			If yes, contact the Cultural Resources Team for approval.	

Subcontractor Review and Approval

14. *Competent Person(s)	Signature:	Date:
15. **Registered Prof. Engineer:	Signature:	Date:
16. Health and Safety Supervisor:	Signature:	Date:
17. Task Manager or Site Supervisor:	Signature:	Date

PMC Review and Approval

18. PMC Cultural Resources Representative:	Signature:	Date:
19. PMC Health and Safety Representative:	Signature:	Date
20. PMC Project Manager or designee:	Signature:	Date

Revegetation Subcontractor Concurrence

21. Task Manager or Supervisor:	Signature:	Date

*Required if soil disturbance meets the excavation definition in 29 CFR 1926, Subpart P and presents a hazard to personnel or property.
**Required if excavation exceeds 20 ft In depth or if custom designed protective systems used.

Instructions for Completing the Intrusive Soil Activity Permit

Block No.	Instructions
Permit No.	The permit number is composed of the project name and the sequential permit number associated with the project. Example: South Plants Demolition, Phase 2 – 001 South Plants Demolition, Phase 2 – 002 Etc.
Expires	The date at which the permit expires. This date is determined by the Field Manager overseeing the activity.
1	Enter the name of the project. If remedy related, enter the implementation project name.
2	Enter the name, phone number, and radio number of the person to contact for more information regarding this intrusive activity.
3	Enter the name of the task(s) you are performing, e.g., installation of water pipe, removal of human health soils, or installation of monitoring wells.
4	Enter the estimated date and time that the intrusive activity will start.
5	Enter the Subcontractor(s) name that will perform the intrusive activity.
6	Enter the estimated date that the intrusive activity will be completed. This does not need to be the same date that appears in the Expiration box.
7	Provide a description of the job activities, specific location, and depths of intrusive activity. Maps and/or drawings are usually necessary to pinpoint the location of work. The description should be detailed enough for reviewers to understand the specific scope of work.
8	Check the appropriate box relating to planned revegetation activities. Checking “Yes” requires the Revegetation Subcontractor to sign line 21 prior to beginning revegetation activities.
9	A Utility Locate Request form must be completed and approved by the PMC Utility Locate Group. In the comment section, note that the Utility Locate Request form is attached to the permit. The permit is not valid unless the approved Utility Locate Request form is attached.
10	If yes, ensure that the health and safety plan is complete and up to date, and note the name or describe the plan/procedure in the comment section. If no, note that work is in a “clean” area.
11	Ensure that the Ordnance Specialist Review and Approval form is complete and note that the completed form is attached in the comment section. The permit is not valid unless the Ordnance Review and Approval form is attached.
12	If yes, verify that a Competent Person is assigned and all applicable requirements will be met.
13	If yes, verify that approval has been obtained. Refer to Block 17 for an approval signature.
14	Name, signature, and date for the assigned Competent Person.
15	Name, signature, and date for the Registered Professional Engineer who designed the excavation or protective system.
16	Name, signature, and date for the on-site Health and Safety Representative.
17	Name, signature, and date for the Task Manager or on-site Supervisor of the intrusive activity.
18	Name, signature, and date for the PMC Cultural Resources Representative.
19	Name, signature, and date for the PMC Health and Safety Representative.
20	Name, signature, and date for the PMC Project Manager or designee.
21	Name, signature, and date for the Revegetation Subcontractor Supervisor.

Figure 16-3 Confined Space Pre-Entry Checklist

	PROGRAM MANAGEMENT CONTRACTOR **ROCKY MOUNTAIN ARSENAL**
PROJECT AND TASK:	**LOCATION:**
COMPANY:	**BRIEFING COORDINATOR/DATE :**

- ☐ Hazard Communication (including the signs, symptoms, and modalities of chemical overexposure)
- ☐ Physical hazards present (including potential for falls)
- ☐ Hazard controls used
- ☐ Acceptable entry conditions
- ☐ Emergency procedures
- ☐ Rescue procedures
- ☐ Duties of entrants and attendants during routine and emergency operations
- ☐ Frequency and Types of Monitoring
- ☐ Communications system backup to be used
- ☐ Review of work to be accomplished during entry
- ☐ Decontamination procedures (if necessary)
- ☐ PPE disposal
- ☐ Potential emergencies that may occur outside the confined space

Figure 16-4 Confined Space Entry Permit Form

FOSTER WHEELER ENVIRONMENTAL CORPORATION

CONFINED SPACE ENTRY PERMIT

PERMIT VALID FOR ONE SHIFT ONLY. ALL PERMIT COPIES REMAIN AT SITE UNTIL JOB COMPLETED.

DATE:_____ SITE LOCATION/DESCRIPTION:_____

PURPOSE OF ENTRY:_____

SUPERVISOR(S) IN CHARGE OF CREWS/TYPE OF CREW/PHONE #:_____

COMMUNICATION PROCEDURES:_____

RESCUE PROCEDURES AND PHONE NUMBERS:_____

REQUIREMENTS COMPLETED	DATE	TIME	REQUIREMENTS COMPLETED	DATE	TIME
Breathing Apparatus			Line(s) Broken-Cappe Blank		
Emergency Escape/Fall Retrieval Equipment			Protective Clothing		
			Purge-Flush and Vent		
Fire Extinguishers			Respiratory Protection		
Full Body Harness w/ "D" Ring			Secure Area (Post and Flag)		
Lifelines			Standby Safety Personnel		
Lighting (Explosive Proof)			Ventilation		

Note: For items that do not apply, enter N/A in the blank. See reverse side for special requirements.

RECORD MONITORING RESULTS EVERY 1/4 HOUR

TEST(S) TO BE TAKEN	Permissible Entry Level	Time(s)							
PERCENT OF OXYGEN	19.5% to 22.0%								
LOWER FLAMMABLE LIMIT	Under 10 %								

REMARKS:_____

GAS TESTER NAME & CHECK #	INSTRUMENT(S) USED	MODEL &/OR TYPE	SERIAL &/OR UNIT #

SUPERVISOR AUTHORIZATION—ALL CONDITIONS SATISFIED:_____ DEPT/PHONE_____

CONFINED SPACE PERMIT (CONTINUED)

PRINT NAME:	SIGNATURE:	FUNCTION (i.e., entrant, attendant, or supervisor)

SPECIAL REQUIREMENTS:

COMMENTS:

Figure 16-5 Line Breaking Checklist

LINE BREAKING CHECKLIST

Complete Prior to Opening, Cutting, or Demolishing Potentially Hazardous Pipelines and Containers

Implementation Project:	Company:	Date:
Company Point of Contact:	Phone/Radio:	Date of work:

Describe work to be performed:

Identify the task-specific HASP that addresses this work:

Identify the Line Breaking Procedure to be followed:

Has an Activity Hazard Analysis been written for this work? ☐ Yes ☐ No (If yes, attach a copy)

Is appropriate worker PPE specified in the HASP, Line Breaking Procedure, or AHA? ☐ Yes ☐ No

What does (or did) the line contain?

Has the line been depressurized? ☐ Yes ☐ No ☐ N/A

Has the line been drained from all low points? ☐ Yes ☐ No ☐ N/A

Has the line been purged or flushed to ensure that no material remains in the line? ☐ Yes ☐ No ☐ N/A

What tests have been performed to ensure that the line is safe to open?

Describe how the line will be broken and tools used:

Are proper lockouts in place to prevent refilling or repressurizing the line while it is open? ☐ Yes ☐ No ☐ N/A

Is a hot work permit required? ☐ Yes ☐ No ☐ N/A Is the permit approved? ☐ Yes ☐ No ☐ N/A

List emergency equipment available in the work area (e.g., fire extinguisher, eyewash, safety shower)

List spill cleanup materials available in the work area (e.g., absorbents, shovels, drums, etc.)

Are emergency contacts and phone numbers known to site workers? ☐ Yes ☐ No ☐ N/A

Review and Approval

Responsible Subcontractor Representative:	Signature:	Date
PMC Project Representative:	Signature:	Date

Use Completed Form to Brief Site Workers and Include Form in Project Files

Figure 16-6 Construction Equipment/ Vehicle Inspection Checklist

CONSTRUCTION EQUIPMENT/VEHICLE INSPECTION CHECKLIST

ROCKY MOUNTAIN ARSENAL

PROJECT/TASK:		**COMPANY:**
DATE:	TIME:	**S M T W T F S** (Circle One)
Incoming: (Check One)	**Outgoing:** (Check One)	**Daily Insp.** (Check One)
Make/Description:	**Model:**	**I.D. No:**

Inspected By: (Name and Signature)

EQUIPMENT	Acceptable	Not Acceptable	N/A	COMMENTS AND ACTION TAKEN
Operation/Owners Manual				
Brakes				
Brake Lights				
Reverse Signal Alarm				
Horn/Air Horn				
Tires/Tracks				
Steering				
Seat Belt				
Operating Controls				
Fire extinguisher				
Lights				
Defroster				
Mirrors				
Instruments				
Coupling Devices				
Bed/Cargo Area				
Tailgate and latch				
Tarp/covers				
Windshield Wipers				
Windshield/Window Glass				
Mudflaps/Rock guards				
Exhaust Systems				
Hitches and Safety Cables				
Hydraulic Lines/ Air Hoses				
Engine Oil Level				
Hydraulic Oil Level				
Rollover Equipment				
Cleanliness				

Comments:

Figure 16-7. Critical Lift Plan

PROGRAM MANAGEMENT CONTRACTOR
ROCKY MOUNTAIN ARSENAL

CRITICAL LIFT PLAN

Complete Prior to Conducting Critical Lifts as Defined in PMC HASP Section 16.13

Implementation Project:	Company:	Date:
Company Point of Contact:	Phone/Radio:	Date of work:
Load Description:		

Sketches Attached: ☐ Lift Layout ☐ Rigging Configuration

Assigned Personnel	Name	Signature
Site Health and Safety Officer		
Lift Supervisor		
Project Engineer (or designee)		
Crane Operator 1		
Crane Operator 2 (if required)		
Rigger		
Signalperson 1		
Signalperson 2 (if required)		

Review and Approval		
Subcontractor Supervisor	Name:	Signature:
Subcontractor HS Supervisor	Name:	Signature:
PMC Project Representative	Name;	Signature:
PMC HS Representative	Name:	Signature:

Figure 16-7. Critical Lift Plan (continued)

PROGRAM MANAGEMENT CONTRACTOR
ROCKY MOUNTAIN ARSENAL

CRITICAL LIFT PLAN

Weight Calculations	Weight (lbs)	Comments
Weight of Object Empty		
Weight of Contents		
Weight of Block		
Weight of Spreader Bar		
Weight of Jib (stored or erect)		
Weight of Rigging		
Weight of Jib Headache Ball		
Weight of Boom Extension		
Weight of Rope Below Sheaves		
Other		
Total Weight		

Crane/Lift Data	Data	Comments
Manufacturer		
Model Number		
Boom Length		
Boom Radius		
Boom Angle		
Hoisting from Main-Aux-Jib		
Crane Capacity		
Rated Capacity for Lift Over Front		
Rated Capacity for Lift Over Rear		
Distance from Center Pin to Center of Load		
Percent of Crane's Capacity		
Cable Capacity		
Number of Parts		
Size of Rigging		
Rigging Arrangement		
Communications		

Figure 16-7. Critical Lift Plan (continued)

PROGRAM MANAGEMENT CONTRACTOR
ROCKY MOUNTAIN ARSENAL

CRITICAL LIFT PLAN

Lift Checklist (see additional comments below)

	Yes	No		Yes	No
Obstacles to lift or swing			Swing area checked and marked		
Electrical hazards			Maximum counterweights		
Operational hazards			Load chart in crane		
Outriggers fully extended			Taglines used		
Outriggers stabilized			Crane in good working condition		
Wind conditions checked			Operator's aids functional		
Crane solid, stable, level			Maintenance records checked		
Foundation support checked			Preparatory inspections complete		
Center of gravity determined					

Checklist Comments

Lift Sequence (attach additional sheets if necessary)

ZIP SLIP Guidelines

1) Recognition for Job Well Done

- To recognize individuals or groups for proactive Environmental, Safety and Quality (ESQ) actions.
- Print the individual(s) or group name in the OBSERVATION section of form.
- If recommending an award, suggest the type of award (e.g., certificate, ball cap, t-shirt, gift certificate).
- Try to recognize personnel as quickly as possible by talking with them, talking about the situation at a meeting, or giving an ESQ award. Keep in mind that some people prefer private vs. public recognition.

2) Suggestions for Improvement

- ESQ suggestions are those that promote ESQ goals and should be encouraged. Suggestions can be to improve a workplace condition, practice, or process.

3) Report of Potential Hazard

- Correct immediately dangerous situations right away or barricade and remove personnel from the hazard until it can be corrected.
- Use the incident report and investigation forms for any high loss potential near hit.
- Try to correct the problem on your own or within your work team. Upon correction, fill in the ACTIONS TAKEN and submit it to your ZIP SLIP Coordinator.
- When you cannot resolve the problem yourself, report it to your Supervisor or Dept. Lead. Indicate this on the ACTIONS TAKEN portion of this ZIP SLIP.

4) Report of Potential Quality Concern

- Deviations from established quality requirements must be corrected immediately.
- Try to correct the concern on your own or within your work team. Upon correction, fill in the ACTIONS TAKEN and submit it to your ZIP SLIP Coordinator.
- When you cannot resolve the quality concern yourself, report it to your Supervisor or Dept. Lead. Indicate this on the ACTIONS TAKEN portion of this ZIP SLIP.

✓ When completed, return to your project of group ZIP SLIP Coordinator.
❖ PMC Contact: Cheryl Medford – Trailer Z-95 (X5510)

ZIP SLIP

- ❑ Recognition for job well done
- ❑ Suggestion for improvement
- ❑ Report of potential hazard
- ❑ Report of potential quality concern

Project or Location _____

OBSERVATION

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Name: _____ **Date:**_____
(Optional)

ACTION TAKEN

Action	Date
1.	
2.	
3.	
4.	

☐ **Reviewed** **Date:** _____
☐ **Closed Out*** **Date:** _____
☐ **Copy to Originator** **Date:** _____

Name: _____
ZIP SLIP Coordinator